

EXHIBIT F

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICRON TECHNOLOGY TEXAS, LLC.,
Petitioner,

v.

NETLIST, INC.,
Patent Owner.

IPR2022-00236
Patent 9,824,035 B2

Record of Oral Hearing
Held: April 19, 2023

Before JON M. JURGOVAN, NABEEL U. KHAN, and
KARA L. SZPONDOWSKI, *Administrative Patent Judges*.

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The above-entitled matter came on for hearing on Wednesday, April 19, 2023, commencing at 1:00 p.m. EST, by video/by telephone.

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1 operation should read on a memory operation. I just actually want to clarify
2 here it seems like Petitioner's identified the write leveling operation as a
3 second memory operation, it seems like you understood that in your briefing.
4 Are we consistent on that?

5 MS. HARGRAVE: I think the confusion here stems from the fact
6 that, for example if you look at Claim 2. And I'd like to potentially during
7 the break make sure that I stated this accurately. But there are portions in
8 the Petition where they've referred expressly to a write operation. And then
9 distinctly to write leveling operation. And so the point is that it's what they
10 say the second memory operation is is a write operation.

11 I think our argument is that write leveling and write operations are not
12 synonymous. But I understand Your Honor's point that, you know, they
13 purportedly tried to argue that they are equivalent when they're not.

14 JUDGE SZPONDOWSKI: Counsel, do you dispute that a write
15 leveling operation is a memory operation?

16 MS. HARGRAVE: Yes. And in fact there are substantial portions of
17 the, you know, Response and Sur-Reply which make clear why that's the
18 case. We pointed to the fact that nothing that is occurring during the write
19 leveling procedure could fairly be constituted as any memory operation.

20 You know, I think that Petitioners today have tried to discount kind of
21 the detail that was included about what's actually happening in Tokuhiro's
22 write leveling procedure. But because they said for example that other
23 operations, you know, including write commands.

24 But what Netlist's position has laid out very clearly in the POR is that
25 none of the operations that occur, to the extent any operation could or any
26 command, nothing that's happening during write leveling could fairly be

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1 constituted as a memory operation. For example, you know, the parties
2 don't dispute that the only thing that's happening during write leveling is
3 these NOP and DESELECT command place holders which everyone agrees
4 tell the memory module to do nothing. Everyone agrees that, you know, no
5 commands other than these placeholders can be issued until the write
6 leveling mode is exited. There's also not any dispute that the no operation
7 placeholders are NOP commands, that the DESELECT placeholders tell the
8 DRAM to ignore commands and address inputs.

9 So there seems to be no dispute that there are no memory operations
10 performed during the write leveling procedure.

11 JUDGE SZPONDOWSKI: What about the write leveling procedure
12 itself, the write leveling operation. Isn't that the memory operation?

13 MS. HARGRAVE: I think, no, Your Honor, it's not the memory
14 operation. It's not a memory operation. Because again, if Petitioners are
15 arguing that ultimately the write leveling operation is a memory operation,
16 and ultimately what you heard Petitioners argue today is that a write leveling
17 operation is a memory operation because it's a write operation. That's what
18 Petitioners have argued today. They say it's a memory operation because
19 it's a type of write operation.

20 And the issue is that that cannot be so based on Tokuhiro itself, which
21 distinguishes between write leveling and write operations. And the Petition
22 itself refers distinctly to write operations, for example, as performed in
23 Osanai from the write leveling procedure performed in Tokuhiro. So they're
24 distinct.

25 JUDGE JURGOVAN: Counsel, I have one question for you. And
26 that is, is a memory read operation equivalent to a read leveling operation,

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1 and is a memory write operation equivalent to a memory write leveling
2 operation?

3 MS. HARGRAVE: No. So a memory, so a read leveling operation
4 for example as that disclosed in Osanai, refers specifically to, you know, as
5 has been discussed earlier, Osanai's use of control signals to activate the
6 input buffer (inaudible-2-52:28), for example. A read operation as
7 disclosed in Osanai is entirely distinct. And for the same reason, so they're
8 referred to differently, they're completely different mechanisms. Read
9 operations are when the module and threw on to the memory controller what
10 to read information from the DRAMs. That's what the read operation is. A
11 read leveling procedure, I would say, to use the language very specifically, is
12 distinct and you can see that in the way that Osanai describes it, for example
13 as distinctly as it does from how it talks about read operations.

14 JUDGE JURGOVAN: Okay. So a read and a write operation be kind
15 of a normal operation of the memory module whereas the leveling
16 procedure's more preparing that module for normal operation?

17 MS. HARGRAVE: I feel leveling, and I'm so sorry, I didn't mean to
18 interrupt. I think the leveling procedures that are described perform specific
19 function. Unless you create either a delay in some circumstances so that you
20 can level out these inconsistencies that relate from these different wire
21 lengths that we spoke about earlier. And those procedures and processes,
22 they're entirely distinct from reading data from the DRAMs, writing data to
23 the DRAMS.

24 The confusion comes because as I mentioned previously during this
25 argument, there are quite a lot of overlapping words that are used by, you
26 know, people of ordinary skill in the art here. But what's very clear is that

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